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EXAMINER

CHANG, AUDREY Y

ART UNIT PAPER NUMBER

2872

DATE MAILED: 01/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,890

Applicant(s)

HONG, HYUNG KI

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on October 27, 2003, which has been entered as paper number 8.
- By this amendment, the applicant has amended claims 2, 4, and 7.
- Claims 1-9 remain pending in this application.
- The rejections to claims 2-9 under 35 USC 112, first paragraph set forth in the previous Office Action **still hold**.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 2-9 are rejected under 35 U.S.C. 112, first paragraph**, as based on a disclosure which is **not enabling**, the *corresponding complementary color coding of the left eye and right eye perspective image* with respect to the *color arrangement* of the *variable color barrier* are **critical or essential** to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. The claims **must show the correspondence** between the color-coding of the images and the color-coding of the color barrier in order for the right eye image to go to right eye only and the left eye image to go to left eye only. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification and claims **fail** to teach how could the stereoscopic image be observed by *simply* having a variable color barrier. Claims 3-6 and 8-9 inherit the rejections from their respective based claims.

Claim 2 only gives the description for the variable color barrier for *selectively transmitting* the picture on the display device response to first and second voltage for stereoscopic mode and response to third voltage for plane mode, yet the claim **fails to make a distinguish** between the "*selectively*

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transmitting" of the picture when the color barrier is response to the *first, second* or *third* voltage to enable the *stereoscopic* or *plane* view. At this juncture, there is **no difference** in the function of the color barrier when in response to the different voltage, which therefore **fails** to establish the enablement of the stereoscopic view and plane view. The applicant is respectfully noted by having a color barrier with alternatively arranged first color filters and second color filters **will not be able to achieve** either the stereoscopic view or the plane view. The video signals that displayed on the display device **must** have a combined video signal at **each pixel** of the display device so that each pixel has **both** the *right* eye image and *left* eye image signal, yet with **different color-coding**. When stereoscopic mode is selected the color barrier is switched in such a way that **only** the right eye image will go to right eye and the left eye image will go to left eye, (the applicant still **fails** to explain how the color barrier is arranged to achieve such), when in the plane mode is selected the color barrier is switched in such way that **both** right eye image and left eye image will go to **both** eyes, (the applicant also still **fails** to explain how the color barrier is arranged to achieve such). It is necessary for the color barrier to have different arrangement or function when in stereoscopic mode or in plane mode yet the applicant still fails to state such difference, which therefore fails to make the enablement requirement for the claims.

3. **Claims 7-9 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the **enablement** requirement. The claim(s) contains subject matter which was **not** described in the specification in such a way as to **enable** one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification and the claims fail to teach how could the stereoscopic image be observed by having color barrier and a *light scattering device*. Claim 7 fails to disclose an operable device since the image displaying apparatus as described therein is *not capable* of providing stereoscopic image display, or fails to provide the essential criterion for achieving such. The applicant is once again respectfully noted by having a color barrier with alternatively arranged

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first color filters and second color filters **will not be able to achieve** either the stereoscopic view or the plane view.

Claims 8-9 inherit the rejections from their based claims.

Claim Objections

4. Claims 2-9 are objected to because of the following informalities:

(1). The phrase “such that adjacent pixels have complementary color relationship” recited in claims 2 and 7 is confusing and indefinite since it is not clear what are these pixels. The claims fail to give proper antecedent basis for these pixels, it is not clear if these pixels are referred to the pixels for display device or for the variable color barrier. *The applicant is respectfully noted the claims (2 and 7) fail to disclose the structural and logical relationship between the display device and the variable color barrier, (also light scattering device as in claim 7) which makes the claims incomplete, confusing and indefinite.*

Claims 3-6 and 8-9 inherit the objections from their respective based claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Isono et al (PN. 5,315,377).**

Isono et al teaches a three-dimensional image display that is comprised of a *liquid crystal display panel* (46) serves as the display device to display a picture according to image signals and *electrically*

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generates parallax barrier strips on a *parallax barrier panel* (28) such that the size and the number of the barrier strips may be adjusted so that they interfere with the image light transmitted from the display panel (46) to display the image either in a *two dimensional mode* (2D) or in a *three-dimensional mode* (3D), (please see Figures 1-2 and columns 1-5). Isono et al teaches in the 3D mode the barrier strips direct the right eye perspective image to the right eye of an observer and the left eye perspective image to the left eye, to create stereoscopic illusion to the observer, (please see Figure 2).

This reference does not teach explicitly that the image signals are obtained by photographing an object at a different angle on a display unit. However it is an essential **criterion** for the image signal to include right eye perspective view and left eye perspective view of the object (i.e. at different angle) in order to achieve stereoscopic viewing, such feature is inherently included in the apparatus of the Isono et al since it does teach to use video signal lines (64-1, 64-2) to input right eye image signal (R) and left eye image signal (L) to the display device, (please see Figure 2). To photograph the object at different angle in order to provide the right eye perspective view and left eye perspective view is the most common practice in the art to obtain parallax images of an object. It would then have been obvious to one skilled in the art to modify the method accordingly to obtain the parallax images of the object photographically for the displaying of stereoscopic image.

7. Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Hematite et al (PN. 5,751,479).

The claims as indicated in the paragraphs fail to provide adequate writings for describing a workable apparatus or for providing the enablement of the apparatus; they can only be examined in the broadest interpretation.

Hamagishi et al teaches a *three dimensional display* that is capable of being switched between stereoscopic mode and 2D display mode, wherein the apparatus is comprised of a *liquid crystal display*

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device (1, Figure 7) serves as the image display device, a *light source* (2) and a *color filter* (3), comprises different filtering regions alternatively arranged that each filters light in a different color that includes complementary color filter regions such as red and green, and a polymer dispersed liquid crystal panel (17), wherein the color filter and the polymer dispersed liquid crystal panel serve together as the *variable color barrier*. Hamagishi et al teaches when the polymer dispersed liquid crystal panel is switch on the color filter with the panel is switched to stereoscopic mode for directing and separating the image displayed on the liquid crystal display in such a way that left eye image reaches left eye of an observer and the right eye image reaches the right eye of the observer to create stereoscopic image display. When the LCD panel (17) is switched off the light from the color filter is combined to white light such that a 2D image display mode is presented, (please see Figures 7-8 and columns 7-8). Hamagishi et al teaches that the color filter can either be placed in front of the backlight or in front of the display device. This reference does not teach explicitly that the image signals are obtained by photographing an object at a different angle on a display unit. However such method is the most common practice in the art to obtain parallax images of an object. It would then have been obvious to one skilled in the art to modify the method accordingly to obtain the parallax images of the object photographically for the displaying of stereoscopic image.

Response to Arguments

8. Applicant's arguments filed on October 27, 2003 have been fully considered but they are not persuasive.

9. In response to applicant's arguments which state that the cited Isono et al reference does not teach a mere mode signal switch enabling a change of viewing mode for the current input signal, the examiner respectfully disagrees for the reasons stated below. Firstly, either in 3D mode or in 2D mode the image displayed on the display device is always a two-dimensional image. The difference for 3D viewing and for 2D viewing is if the right eye perspective image and left eye perspective image is directed to right eye

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and left eye *respectively* in the first case and to *both* of the eyes in the second case. Isono et al teaches the controller (22) is capable of driving the barrier to achieve such which therefore allows the switching between the two modes. Secondly, the claim **only** claims to for either separating a picture to left eye and right picture or transmitting the picture to both eyes, which is achieved by the function of the barrier of Isono. In response to applicant's argument, which states that the cited Isono reference fails to teach photograph an object at different angle, the examiner respectfully disagrees for the reasons stated below. Firstly the left eye perspective image (L) and right eye perspective image (R), for stereoscopic viewing, are images of an object at different angle, that are essential for stereoscopic viewing. Isono does teach to input right eye image signal and left eye image signal to be displayed at the display device, (please see Figure 2). Isono also teaches to use two television cameras, (please see Figure 1, element 9) to input the image information which suggests some sort of photographing process is involved.

In response to applicant's argument which states that the cited Hamagishi et al reference does not teach barrier having a plurality of first color filters and second color filters alternated with each other, the examiner respectfully disagrees since the different color filtering regions of Hamagishi et al are indeed alternatively arranged.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH**

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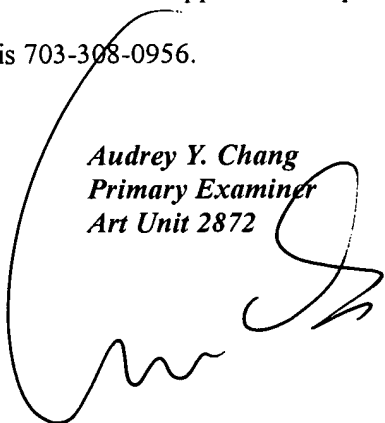
shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Audrey Y. Chang
Primary Examiner
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A. Chang, Ph.D.